

FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST-7251

FACILITY NAME: PHOTO DYNAMICS

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INTRODUCTION

This fact sheet is a companion document to the draft State Waste Discharge Permit No. ST-7251. The Department of Ecology (the Department) is proposing to issue this permit, which will allow discharge of treated wastewater to Central Kitsap Treatment Plant. This fact sheet explains the nature of the proposed discharge, the Department's decisions on limiting the pollutants in the waste water, and the regulatory and technical bases for those decisions.

Washington State law (RCW 90.48.080 and 90.48.160) requires that a permit be issued before discharge of wastewater to waters of the state is allowed. This statute includes commercial or industrial discharges to sewerage systems operated by municipalities or public entities which discharge into public waters of the state. Regulations adopted by the state include procedures for issuing permits and establish requirements which are to be included in the permit (chapter 173-216 WAC).

This fact sheet and draft permit are available for review by interested persons as described in Appendix A—Public Involvement Information. Process flow diagram is included in Appendix B.

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in these reviews have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Changes to the permit will be addressed in Appendix C—Response to Comments.

GENERAL INFORMATION	
Applicant	Photo Dynamics
Facility Name and Address	P.O. Box 3565 Silverdale, WA 98383
Type of Facility	Photoprocessing
Facility Discharge Location	Latitude: 47° 40' 00" N Longitude: 122° 40' 03" W
SIC Code	7384
Treatment Plant Receiving Discharge	Central Kitsap Sewage Treatment Plant <u>Discharge Outfall:</u> Latitude: 47° 40' 35" N Longitude: 122° 36' 05" W
Contact at Facility	Mr. David J. Quinn (360) 698-3360

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

History

Photo Dynamics has operated a photoprocessing laboratory in Silverdale, Kitsap County, since 1982 (see Figures 1 and 2). The activities at the laboratory facility involve film processing, film printing on paper (including color, black and white, and E6 slides), and paper processing for customers. The facility does not process K-14 slides. The facility operates two film processing and three paper processing units. According to the facility manager, an average of 270 square meters per day of photo material is processed. During the peak season (September through November), 600 square meters per day are processed.

Industrial Processes

When black and white film leaves the developer bath and enters the fixer, the unexposed and undeveloped silver halides on the film are converted to a soluble complex and released in the fixer. In color film, nearly all the silver is released in the fixer or bleach-fix bath. The film then enters the wash water where some silver-laden fixer adheres to the film and/or paper or is carried into the wash water. The film now contains a negative image of the scene which the camera recorded. A positive print is prepared by exposing a photosensitive sheet of paper to a light source passing through the negative film image. The paper is then processed through a similar set of operations (that is, developer, stop bath, fixer, and rinse). The processing operations are depicted on Figures 3 and 4.

Wastewater Generation

Waste water is primarily generated from the film processing and paper processing operations. The main contaminant of concern in this waste water is silver, which may be present as a silver thiosulfate complex. Silver can be found in used fixer, bleach-fix, washless stabilizer, and C-41 bleach operations.

The film processing unit uses developer, bleach, fixer, and stabilizer solution. The paper processing unit uses developer and bleach-fix mix solution. Some processing units also use water for rinsing the chemicals from the film and paper.

The chemicals in the processing units are replenished as needed to maintain the necessary strength. The rinse water is also replenished with uncontaminated water as needed. The spent solution from the fixer, bleach-fix, C-41 bleach, and washless stabilizers go through a series of two Chemical Recovery Cartridges (CRC or Silver Recovery Unit) for silver recovery. The final rinse for enlarger and E6 slider are conducted in a continuous flow of fresh running water.

The rinse water and small amounts of silver and other fixer compounds overflow directly into a drain which then discharges into the sanitary sewer system.

All of the process wastewater is discharged into the Central Kitsap Sewage Treatment Plant.

Treatment Process

CRCs are hollow canisters that contain steel fibers or fiberglass impregnated with iron filings. Two CRCs in series are being employed by Photo Dynamics. Fixer, bleach-fixers, C-41 bleach, and washless stabilizer are run through the cartridges. When the iron contacts a solution containing dissolved silver, the iron is dissolved and the silver comes out of the solution.

The system is monitored for silver output using silver indicator paper or a test kit, and the recovery system is replaced when its capacity is exhausted. All silver-bearing solutions are channeled through these cartridges. The supplier of the system is Hallmark Metal Recovery located in Mount Vernon, Washington. The spent cartridges are returned to the manufacturer.

PERMIT STATUS

The previous permit for this facility was issued on June 8, 2001.

An application for permit renewal was submitted to the Department on February 24, 2006, and amended on April 27, 2006. The application was accepted by the Department on May 10, 2006.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility last received an inspection on April 12, 2000.

During the history of the previous permit, other than the four warning letters that the Department sent to the facility for failure to submit Discharge Monitoring Reports (DMRs) in a timely manner, the Permittee has remained in compliance based on DMRs submitted to the Department and inspections conducted by the Department.

WASTEWATER CHARACTERIZATION

Based on the monitoring data submitted by the facility during the last permit cycle, the proposed wastewater discharge has been characterized as follows:

<u>Parameter</u>	<u>Concentration</u>
pH	8.8 standard units (s.u.)
Silver	1 mg/L

PROPOSED PERMIT LIMITATIONS

State regulations require that limitations set forth in a waste discharge permit be based on the technology available to treat the pollutants (technology-based) or be based on the effects of the pollutants to the POTW (local limits). Waste water must be treated using all known, available, and reasonable methods of treatment (AKART) and not interfere with the operation of the POTW.

The more stringent of the local limits-based or technology-based limits are applied to each of the parameters of concern. Each of these types of limits is described in more detail below.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

All waste discharge permits issued by the Department must specify conditions requiring available and reasonable methods of prevention, control, and treatment of discharges to waters of the state (WAC 173-216-110). Photo processing is a categorical industry in the photographic processing subcategory, subpart A of 40 CFR part 459. This federal regulation applies to industries discharging to surface waters in the United States. Since Photo Dynamics does not discharge to surface waters, the categorical limits do not apply to the facility. The effluent limitations set in this permit will be those local limits which were agreed to by the Central Kitsap Sewage Treatment Plant.

EFFLUENT LIMITATIONS BASED ON LOCAL LIMITS

In order to protect the Central Kitsap Sewage Treatment Plant from pass-through, interference, concentrations of toxic chemicals that would impair beneficial or designated uses of sludge, or potentially hazardous exposure levels, limitations for certain parameters are necessary. These limitations are based on local limits established by the Central Kitsap Sewage Treatment Plant. Applicable limits for this discharge include the following:

<u>Parameter</u>	<u>Daily Maximum</u>
Silver	2 ppm
pH	6 to 10 s.u.

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are specified to verify that the treatment process is functioning correctly, and that effluent limitations are being achieved (WAC 173-216-110). The monitoring schedule is detailed in the proposed permit under Condition S2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

OTHER PERMIT CONDITIONS

REPORTING AND RECORD KEEPING

Special conditions of S3 are based on the authority to specify any appropriate reporting and record keeping requirements to prevent and control waste discharges [WAC 273-216-110 and 40 CFR 403.12 (e),(g), and (h)].

OPERATIONS AND MAINTENANCE

The proposed permit contains Condition S5 as authorized under RCW 90.48.110, WAC 173-220-150, chapter 173-230 WAC, and WAC 173-240-080. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

PROHIBITED DISCHARGES

Certain pollutants are prohibited from being discharged to the POTW. These include substances which cause pass-through or interference, pollutants which may cause damage to the POTW or harm to the POTW workers (chapter 173-216 WAC) and the discharge of designated dangerous wastes not authorized by this permit (chapter 173-303 WAC).

DILUTION PROHIBITED

The Permittee is prohibited from diluting its effluent as a partial or complete substitute for adequate treatment to achieve compliance with permit limitations.

SOLID WASTE PLAN

This proposed permit requires, under authority of RCW 90.48.080, that the Permittee develop and submit to the Department a solid waste plan to prevent solid waste from causing pollution of waters of the state.

GENERAL CONDITIONS

General Conditions are based directly on state laws and regulations and have been standardized for all industrial waste discharge to POTW permits issued by the Department.

Condition G1 requires responsible officials or their designated representatives to sign submittals to the Department. Condition G2 requires the Permittee to allow the Department to access the treatment system, production facility, and records related to the permit. Condition G3 specifies conditions for modifying, suspending, or terminating the permit. Condition G4 requires the Permittee to apply to the Department prior to increasing or varying the discharge from the levels stated in the permit application.

Condition G5 requires the Permittee to construct, modify, and operate the permitted facility in accordance with approved engineering documents. Condition G6 prohibits the Permittee from using the permit as a basis for violating any laws, statutes, or regulations. Conditions G7 and G8 relate to permit renewal and transfer. Condition G9 requires the Permittee to control production or wastewater discharge in order to maintain compliance with the permit. Condition G10 prohibits the reintroduction of removed pollutants into the effluent stream for discharge. Condition G11 describes the penalties for violating permit conditions.

PUBLIC NOTIFICATION OF NONCOMPLIANCE

A list of all industrial users which were in significant noncompliance with pretreatment standards or requirements during any of the previous four quarters may be annually published by the Department in a local newspaper. Accordingly, the Permittee is apprised that noncompliance with this permit may result in publication of the noncompliance.

RECOMMENDATION FOR PERMIT ISSUANCE

PERMIT MODIFICATIONS

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics. The Department proposes that the permit be issued for a period of five (5) years.

REFERENCES FOR TEXT AND APPENDICES

1. Code of Federal Regulations, 40 CFR 459 for Photographic Point Source Category.
2. *Environmental Management and Pollution Prevention*, a guide for photo processing, published by Washington State Department of Ecology, September 1994.
3. State Waste Discharge Permit Application submitted by the Permittee on February 24, 2006.
4. State Waste Discharge Permit Program, chapter 173-216 WAC, September 22, 1993.

APPENDIX A—PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page one of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

The Department will publish a Public Notice of Draft (PNOD) on XXXX in *The Sun* to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Coordinator
Department of Ecology
Northwest Regional Office
3190 – 160th Avenue SE
Bellevue, WA 98008-5452

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty-(30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-216-100). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing.

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (425) 649-7000, or by writing to the address listed above.

APPENDIX B—PROCESS FLOW DIAGRAM

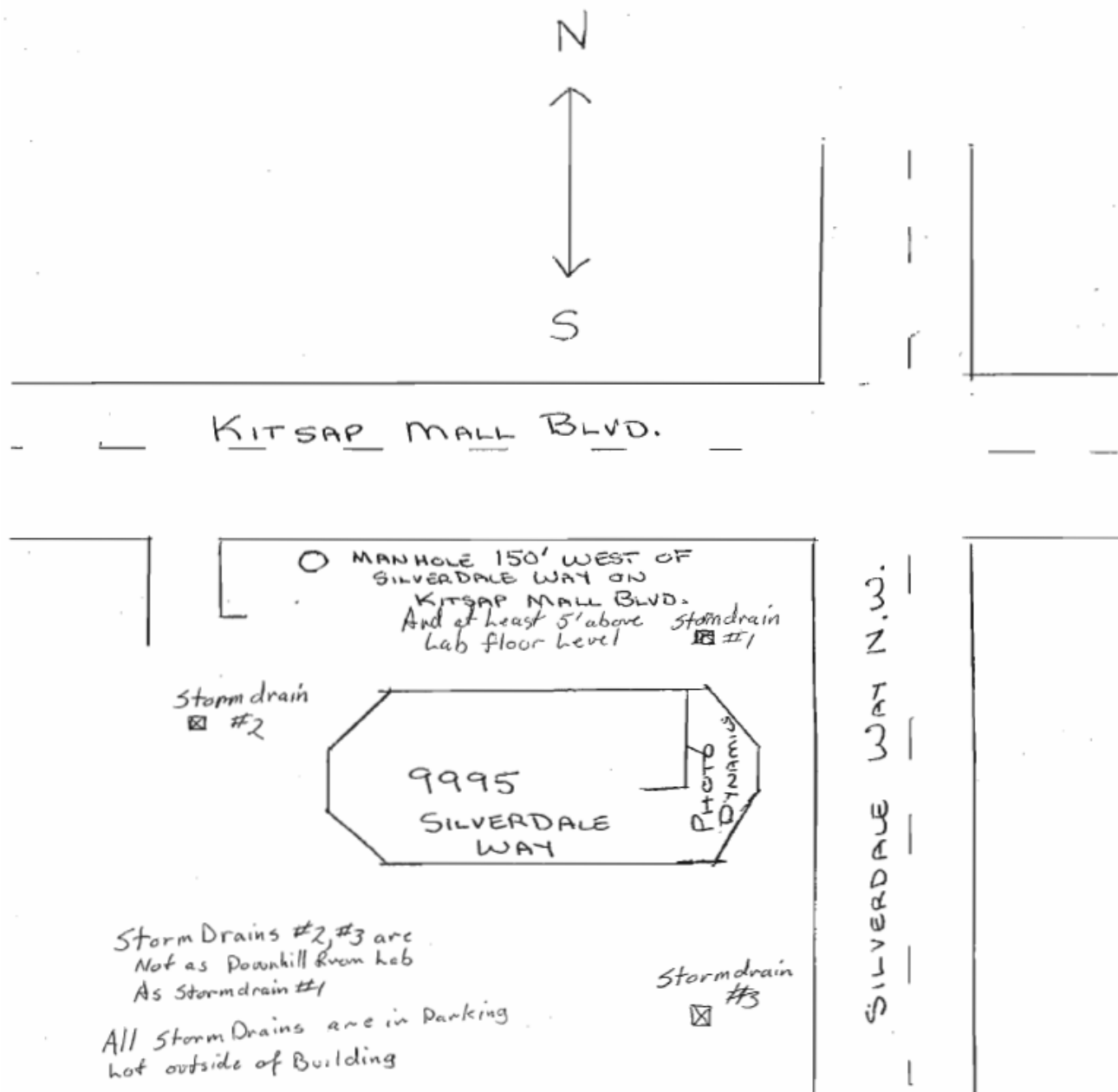


Figure 1. Location

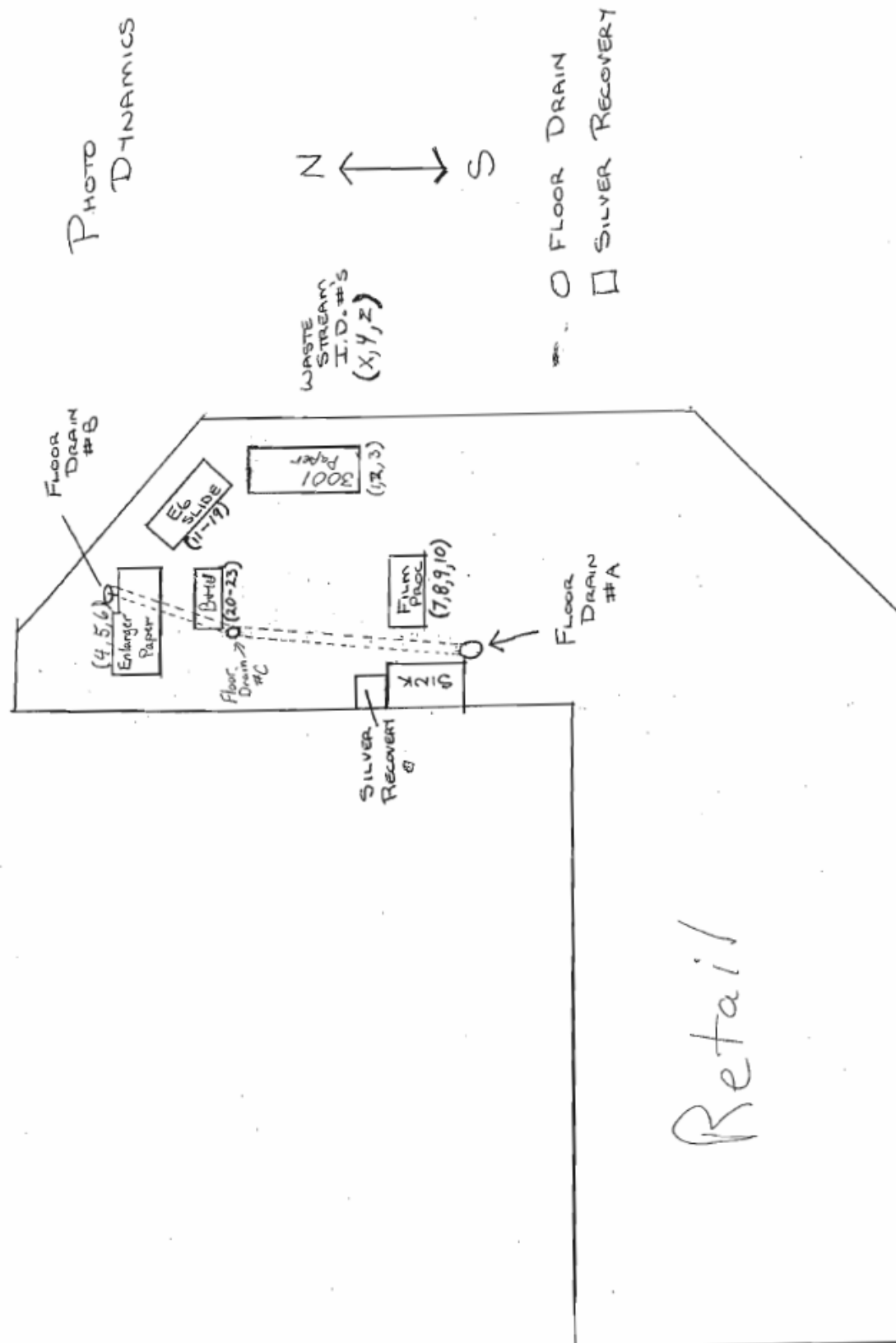


Figure 2. Floor Plan

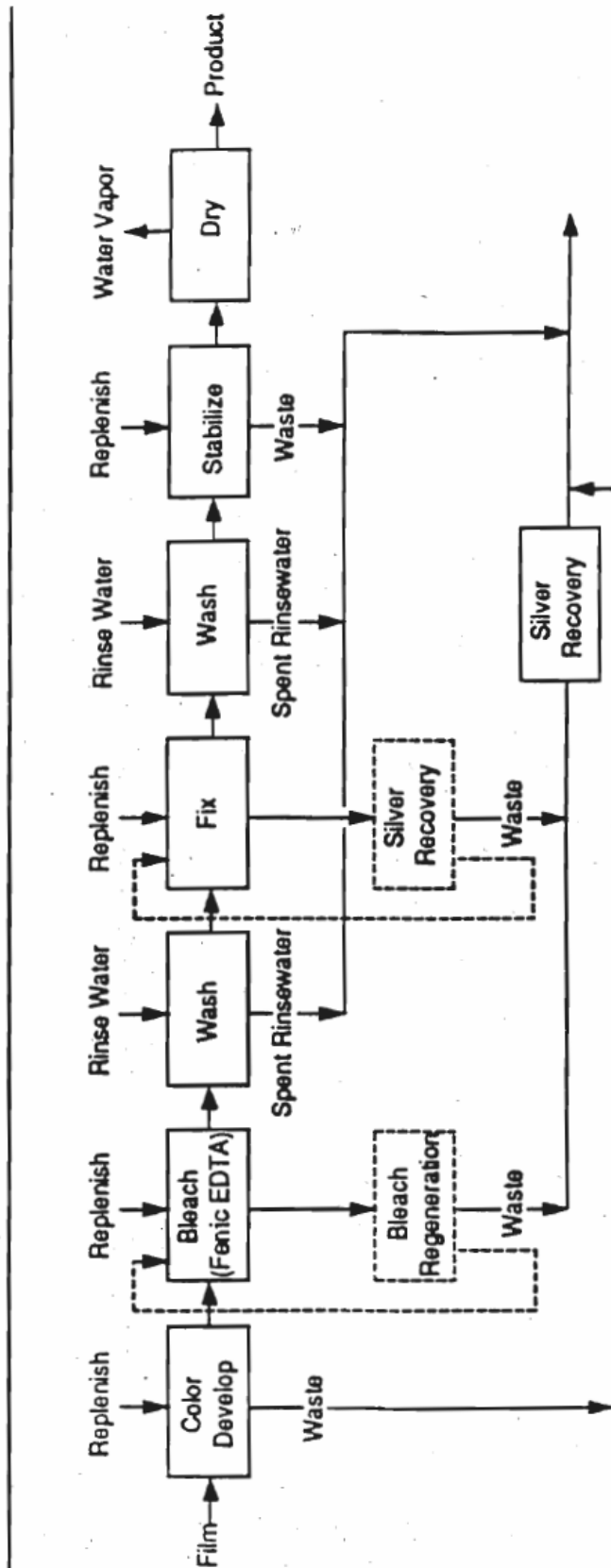
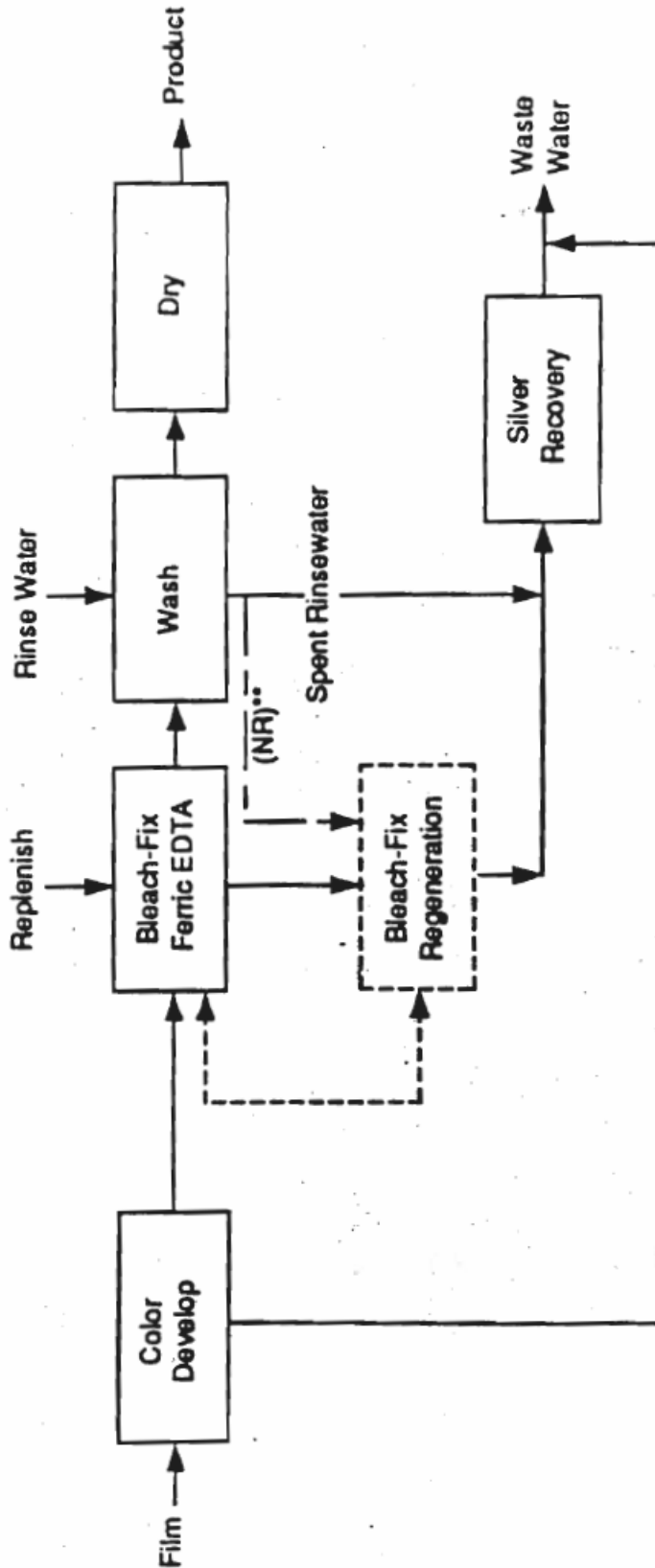


Figure 3. Process: Color Negative Film



*No Regeneration with NR Bleach Fix
**Silver Recovery from Wash Used in EP-2 Process with NR Bleach Fix

Figure 4. Process: Color Negative Paper

APPENDIX C—RESPONSE TO COMMENTS